Design Project Three
HCI Design I • Fall 2002

There is a central quality which is the root criterion of life and spirit in a person, a town, a building, or a wilderness. This quality is objective and precise, but it cannot be named.

— Christopher Alexander
from *The Timeless Way of Building*

Goals

Your team will be placed under simulated conditions for working in a software startup that specializes in mobile computing. The name of the company is **TwoThumbs, Inc**. The company is developing a series of collaborative utilities, and your team has been assigned the challenge of designing the first utility – a computer imaginative scheduling program for the new Palm Tungsten T handheld (see www.palm.com).

The Chief Technology Officer (CTO), Ayla Jorgensen, Ph.D., provided some of the specs and challenges (see her memo below), but it is your team's challenge to precisely define the design message, the complete feature set and design specification, and develop a high fidelity mockup by Wednesday, December 4th. AJ, as Dr. Jorgensen is known in the company, made it clear that your team's utility will set the stage for future and related utilities offered by **TwoThumbs, Inc**. While AJ doesn't want to constrain your design, she's interested in its ability to work seamlessly with other related, but yet to be designed, tools. Given that AJ earned her doctorate from Stanford University, and spent four years working in Microsoft Research Labs, she is a demanding manager. Understandably, your team will want to perform well since your work will set the stage for future designs.

The Assignment

Your job is to carefully manage your time in order to accomplish six objectives:

1. Develop the design message for your product.

2. Define the complete specifications for your design, including inputs and outputs, style guide, etc. Explicitly list all features developed.

3. Create your first design with a PowerPoint (or equivalent) electronic mockup.

4. Conduct a usability test of your mockup. Describe the results and any revisions to the design.

5. Based on the results of objective 4, revise the design and conduct a second usability test. Describe the results and any revisions to the design.

6. Create and deliver a compelling presentation of your second design to company management, sharing some of the remaining problems discovered from the second usability test.

As always, you will be judged on the criteria set forth in your previous exercises: attention to the seven themes of good design, degree of professionalism, quality of your presentation, and any other criteria that may emerge during "conversations in *SSF*." Dr. Jorgensen will be online to answer your questions; she's working in Redmond, Washington this month, on assignment for **TwoThumbs**. Note the time difference. It's three hours earlier on the west coast.

Attention should be given to the design *process* as well as to the design *product*. Decider protocols discussed in class must be used.

You may think of your mentor as your Team Lead — someone who will guide you through your work, but who is unable to give definitive answers. Mentors are **TwoThumbs, Inc**. managers; they have participated in numerous meetings with management and are aware of company and project goals. They all report to AJ.

Important Note

Project Three, like the previous two, is difficult. Creating a complete design is likely to take more time than is allocated. Therefore, total completion is not the criterion. How your team tackles the problem and solves fundamental aspects of the problem is more important than a weak solution to the entire problem. Quality, not quantity, is demanded here.

AJ's Memo

To: Members of the Design Team

From: Ayla Jorgensen, Ph.D.
Chief Technology Officer,
TwoThumbs, Inc.

Subject: Initial Thoughts

Date: November 4, 2002

This is a summary of what we discussed yesterday at the weekly CTO Meeting. Our goal is to create an interface for new Palm Tungsten T handheld device (with *wireless* communication capabilities) to allow two or more users with these devices to "automatically" schedule a meeting. For example, Mara and Jason need to schedule a meeting within the next week. While they continue their conversation, their respective Palms "talk" to one another – searching their respective date books to find possible meeting times. Note that Mara and Jason may be in the same room or in different locations. For distance data exchange, security and other issues come into play.

The application may ask some questions or simply schedule the meeting. Of course this utility must be more efficient than what two people might do on their own—in person, on the telephone or via e-mail. The value for the utility may increase as the number of people (and Palms) communicate to schedule a single meeting. But what's the practical limit here?

What would such a program need to know as input? Here are some things we discussed as *potential* inputs:

1. How long of a meeting?
2. Where will the meeting take place?
3. When must the meeting take place – next week, in one day, sometime during the next two months, etc.?
4. Is it necessary to schedule time between meetings where participants will attend in person (for example, you can't schedule an 11 A.M. meeting in New York if a meeting in Chicago ends at 10:45 A.M.)?

5. If I am $Palm_1$, how does wireless communication work to get the schedule from $Palm_2$? Does $Palm_1$ and $Palm_2$ use a personal address book to authorize each other? Don't worry about the technical mechanics; that's work for another team; focus instead on the software interface/interaction issues.

There are many things to consider, including:

1. The Palm screen size is small! Find out its exact size and fonts used.
2. Interaction must be quick and easy, or it's not worth the effort.
3. How do you display numerous choices? What if there aren't any good times?
4. Does the program schedule the meeting or just display a possible time for it, with the user confirming?
5. How does the program determine acceptable hours of operation? (For example, while a person might work after 5 P.M., they may not wish to have a meeting scheduled at 2 A.M. or even 8 P.M.)
6. Do users have events scheduled that don't actually lock out times? (For example, while I have "personal writing time" scheduled from 8 A.M. to 1 P.M., I might be able to meet during this period.)
7. What will users need to input before the process can begin (i.e., what's the human input)?
8. What is the exact program output? And under what circumstances?
9. How do things change as there are multiple users? Three? Four? Five? (Should there be a limit?)

Getting Started

Information will appear in the Project #3 folder. Read it often!

You then need to start formulating questions and get them into *SSF*. It's a good idea (this is a polite way of saying that it's a requirement) to select one person from each team to write the team's questions in *SSF*.

NOTE: AJ will try to answer your questions, but she can be reached online only. Use *SSF* for all questions. She also has other work to do, so she will not be available every day over the next few weeks. Thus, it's important to ask your questions as early as possible.

Mockup

Your mockup must be done in *PowerPoint* or some other convenient mockup tool such as *DreamWeaver* or *Flash*. Use this for the usability tests. Remember that your mockup must simulate the exact size of the Palm Pilot screen and its font. You may need to consult online or book references for Palm interface specifications (as you find these, share the sites in *SSF*).

Usability Tests

You will need to conduct a usability test after the first and second mockups. Each test should include three to four people. Use techniques discussed in the readings and class.

What to Submit for Project #3

1. Post in *SSF* your team's design questions. AJ will respond as she has time to respond. Because there are 21 teams, don't ask questions already asked. Some teams may not ask any questions. But the first 7 teams to ask questions will receive two magic points for each team member.

2. Submit a design message, assumptions and constraints, and a design feature set for your design; be concise, but there is no page limit.

3. Submit design sketches for your design. Submit this on paper. (No page limit) These are your initial sketches. Don't throw them away!

4. Submit a *PowerPoint* (or other approved) file (called "Team _-Design1") of your first mockup.

5. Submit the results of your usability test and recommendations. Your design should be tested with three to four people. (Limit of four pages for your usability report.)

6. Submit a *PowerPoint* (or other approved) file (called "Team _-Design2") of your second mockup.

7. Submit the results of your usability test and recommendations. Your design should be tested with three to four people. (Limit of four pages for your usability report.)

8. Submit all *Word* files, *PowerPoint* (or other type) files, and program files to the *SSF* listing called "Submissions" folder in the Project #3 folder.

9. Each person must submit in a **sealed** envelope their collaboration evaluation of each person in their *team*, including a self-evaluation. Sign each evaluation page. The form is in the Project #3 folder.

10. All components of your team project should be submitted in one large envelope by the team facilitator, including paper versions of all *Word* files, and the mockups. The project is due at the start of class on the due date.

Consultations

Each team should arrange to meet with their mentor at least twice in the design process. The team's facilitator should arrange the meeting. The first meeting should occur early in the process.